1: Messing E-5 (1953-1954)1957 MP5 Amhara MP5

carried down the Blue Nile into Egypt. In Ethiopia, irrigation canals make use of it.

(3) The remaining, eroded, red loam soil, of little fertility. This is left to the bush or is used for grazing.[5]

There is little information on the mineral wealth of Ethiopia, since whatever there is, particularly gold, has been kept from the knowledge of outsiders. The Italians had merely begun their surveys when they had to leave the country. Salt has always been a major item of import from the border lowlands in the east to the highland plateau. Numerous volcanic mineral springs, used for healing since ancient times, exist in many plateau districts.

Since ancient times, gold from the sand gravels of Wollega and southern provinces was sold in small nuggets, or fashioned by goldsmiths into rings and sold by weight. It is now a monopoly of the central government; goldsmiths have been drawn to Addis Ababa, where they now use modern methods.

D. Flora, Fauna: their significance in Ethiopian Ecology.

The generosity of nature on the highland plateau has provided a basis for human subsistence with little effort. In addition to a healthful climate and fertile soil, resources of vegetation and animal life are abundant.

Economic botanists have conducted studies which indicate that the highlands of Ethiopia contain a number of indigenous varieties of cultivated cereals and legumes. Some are of the opinion that these highlands even formed one of the PRIMARY

5. Chamber of Commerce of Addis Ababa: Guidebook of Ethiopia, 1954, p. 127-8.

244 topography provides for a variety of climate at a minimum of distance, is very favorable to diversified agriculture. But, as indicated before, the uses of power have not developed in millenia. Much land is permitted to lie fallow, and slash-and-burn methods are used when old soil becomes exhausted and new lands are needed. Therefore, apart from market villages, no settlements remain on the same spot for as much as a century, usually. The fields are not fertilized; manure from cattle is used as fuel. However, irrigation, though not intansive; terrace farming since ancient times; and the use of a wooden scratch plow with iron tip, give the Amhara agricultural picture an old-Middle Eastern character. Also Middle Eastern is the fact that among the Amhara and other north Abyssinians cereals are the most important field crops.

Ninety-five percent of the population of Ethiopia depends on farming and stock raising.[60] European estimates [134] indicate that half the land territory of Ethiopia is arable. Despite much erosion, the depth of the subsoil is regarded as unusually deep. But much good land is left fallow, be- [31] cause there is enough land for the low density of the population; and because life is fairly comfortable at the old standards of living, especially now that ravaging armies of hungry soldiers seem a thing of the past. Thus, there is little urge for increased production, except by proclamation from the central authority from Addis Ababa which has tried to stimulate it with only modest success. The reason for this lack of success is that the farmer argues, with

60. Underhill, C.T.: Industry in Ethiopia, 1950, p. 21.

1: Messing E-5 (1953-1954)1957 MP5 Amhara MP5

considerable justification, that even if he raised larger and more diversified crops, they would not find a ready sale (due to undeveloped lines of transport to world markets). Thus the old pattern of not raising more crops than one's family can consume in one year, and for taxes and tribute, continues, especially among the Amhara; consequently fields do not become exhausted as quickly as they would in intensive agriculture.

[427] Another factor was (and is to some extent) the insecurity of tenure. The sharecropping "gabbar" was little more than a serf, who did not know from year to year what treatment he would receive from the next (often absentee) feudal landlord to whom his land might be assigned the next year. This was not conducive to the growth of much sentimental attachment to any particular plot of soil.

[311] Among the Amhara, only about 20% of the potentially fertile area available in a neighborhood ("and debber agar") is usually under cultivation in any one year. On exposed parts of the plateau the crops are usually barley, broad beans, some bearded wheat, and linseed. In more sheltered spots, lentils, chick peas, and a legume called "gwayo" used as cattle fodder (but feared by Amhara because walking in it or lying in it is supposed to cause softening of the human bones). Barley is planted almost the whole year round, starting early with the "light rains", and irrigated in the dry season. In valleys of the plateau, where fields are warmer and more protected, as well as better watered, the major crop of tieff, a grass-like

243 of "madiga".

[311] The term "tyëff" also has a projection. Good, fertile, fat land is still classified as "läm̈m tyëff", in distinction to "tyëff" land, meaning average usable land for cereals.

Mashella is used as a concept in the following proverb:

[539] "(Both) the seed of mashella
and the stalk, are good"

This is to say that if the parent had good qualities, the son will be a "chip off the old block."

Numerous distinctions are made in the types and qualities of each of the cereals. Among tyëff the farmer distinguishes "bunneñ" which grows and matures rapidly even in läskäräm immediately on the end of the rainy season. In barley, the "aja" is disliked because of its coarseness, but its green fields, irrigated, stand out among the sun-yellowed stubble in the dry season and provide a pleasant sight, as well as year-round crops. "Ferey gebs" is a fine choice barley, and "sänäf qolo" (a long-eared variety) is roasted as a daily condiment.

248 Cotton, called "tet", is grown in lowland areas. To separate the husks, a roller of scrap iron is preferred; it is worked on a rock. When rain has occurred during the maturing of cotton, its quality is lowered. The typical Amhara prefers to buy his raw cotton on the market and have his wife or female servant clean, card and spin it. Then he calls in the weaver or takes the spun cotton to him, to make a toga.

3: Buxton Y-5 (1946-1948)1949 MP5 Amhara MP5

of running water, and appeal to such *Dei ex machina* as marine action and waves of translation, cannot see a few such marks of the handiwork of rain and rivers as are shown by these gorges. There is not the slightest possibility, as far as I can see, of explaining their origin by any other force than that of the streams flowing in them. Any faulting or dislocation of the rocks is out of the question, there is no evidence of glacier action at any past time, and even the most fervent apostle of marine denudation would scarcely credit it with the formation of a Titanic trench three-quarters of a mile deep and very little more in breadth."

This description would apply equally to the gorges found in other parts of the Ethiopian highlands, for they are all, as far as I have seen, remarkably similar; and no geologist would now question their formation by stream erosion.

The formations of Blanford's area were called by him the Magdala group of "Traps"—an enormously thick, practically horizontal layer of lava flows. They were especially characterized by bands of trachyte, often columnar, weathering to form steep scarps. These formations are probably of late- or post-Cretaceous age, since Blanford's Ashangi Traps (upon which the Magdala group lies unconformably) were tentatively attributed by him to the Upper Cretaceous. Referring to the Magdala Traps Blanford says: "It is highly probable that the Trap rocks of Shoa belong, in part at least, to this group", his belief being based on some descriptions of Rocher d'Hericourt, who travelled in Shoa in the 1840's. My own limited observations confirm this assumption, except that in our area the most conspicuous cliffs and scarps consisted of columnar basalt, not trachyte. The area shown on the map consists of alternating harder and softer layers of volcanic rocks, including basalts, trachytes and tuffs (the latter often used, as in Kenya, for building). They dip slightly to the north-west.

The plateau, which occupies most of the sheet, lies everywhere above 9000 feet. It enjoys a temperate climate, and frosts are not uncommon in December and January. It is swept by easterly winds throughout the year, except when rain is actually threatened or falling, when it commonly turns right round to the west—a frequent occurrence during the long rainy season (June to September). The volcanic rocks have given rise to deep and potentially very fertile soils. The high plateau is mostly short grassland with very little bush, except in places protected both from wind and grazing animals, and very few trees except for small clumps of introduced Eucalyptus which mark almost every inhabited place. Owing to the scarcity of timber a dung-fuel known as *kubat* is usually burnt. At first sight the plateau appears very thinly populated but this, as will be shown, is an illusion. Anything like a village is rare, but isolated homesteads occur almost everywhere on rising ground. Nearly all this country makes good grazing for cattle, sheep and goats, and it is high enough for horses to flourish. Perhaps a third of it is more or less cultivable, though the area under cultivation in any one year is much less. Owing to cold and exposure very few crops flourish on the plateau itself, the principal ones being barley and broad beans.

The natural flora of the high plateau is not rich, though in rocky, sheltered spots a succession of attractive herbs and shrubs, including Jasmine, a yellow

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Artificial terraces and natural shelves, Dalecha gorge

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[Facing p 160] *Shelves at two levels, Chacha gorge*

3: Buxton Y-5 (1946-1948)1949 MP5 Amhara MP5

Buddleia, a large St. John's Wort and a handsome red Aloe, comes out in the course of the year. There is a very striking giant thistle (*Echinops*). During the rains lilies, orchids, and red-hot-pokers (*Kniphofia*) come up in plenty. Many typically temperate genera occur in the mountain grasslands, examples being a low-growing wild rose, ladies' mantle (*Alchemilla*) and mullein (*Verbascum*).

The lower plateau, which is the more extensive part and the only type of country seen from the motor road, is comparatively flat and therefore has naturally been traversed at all times by the main routes between north and south. The streams meander through broad, shallow valleys which, being swampy and almost impassable in the rains, are uninhabited, but much used for grazing. The main streams, following the dip of the lava beds, flow north-west. Well-marked tributaries are few, and after heavy rain the water simply drains away over the general surface. Here and there are small secondary plateaus, standing two to three hundred feet above the general level; their slopes where not too steep are well populated and their flat tops largely under cultivation. Good examples are the village areas of Fajji and Aloberet shown on the map. These small plateaus, as well as all the edges of gorges in the north-west corner of the sheet, are capped with a very hard layer of basalt which (as I found to my great annoyance when making the compass survey) contains an abundance of magnetic iron. A hundred years ago, as several travellers have recorded, these rocks were used for iron-smelting, but the industry has long since been abandoned.

As we follow the streams upwards into the higher part of the plateau the character of the country changes. The broad plains narrow down and disappear, and the streams, more recently entrenched, flow in narrow valleys and little ravines; some of them might be thought quite striking if it were not for the severe standard of comparison afforded by the huge gorges below. The country is broken up into hills, usually steep-sided and flat-topped, and rocky hogsbacks. This kind of country is to be seen in the south-east corner of the sheet. The most interesting feature here is the wedge of country left standing up between the Beressa river and its large tributary the Maka. It has been cut away sharply on either side and forms, in its narrower part, a high ridge between the valleys. One of the highest points was appropriated long ago for a fort (near the village of Dilila) and was again used as such, by both parties at different times, during the Italian régime. The other high point (a prominent hill farther to the south-east, near the edge of the sheet) has recently been crowned with a church dedicated to the archangel Gabriel.

The third and most interesting type of country is that of the gorges, which cut into the almost level plateau with such remarkable abruptness that they resemble scoopings in a lump of cheese made with a sharp-edged gouge. At the head of each gorge the streams form a series of falls, or in some cases a single big fall of 400 feet or so; even higher falls, up to 600 feet, can be seen elsewhere. Everywhere the upper walls of the gorges, which are basaltic, fall precipitously, and often form vertical cliffs several hundred feet high. So sharply defined are these gorge-edges that a heedless person walking on the plateau might, in some places, fall over them into the abyss. The walls do not however drop away continuously to the stream at the bottom; at a certain level, or in some valleys at more than one level, a horizontal shelf is